

WHAT IS CLAIMED IS:

1. A magnetic sensor-type antenna comprising a magnetic core and a coil wound around said magnetic core for receiving a radio wave, said antenna being disposed in a housing, and end portions of said magnetic core being bent in a direction away from said housing or a metal part of said housing.
2. The magnetic sensor-type antenna according to claim 1, wherein said magnetic core further has bent tip end portions.
3. The magnetic sensor-type antenna according to claim 1 or 2, wherein said magnetic core has pluralities of branched end portions, at least one of which is bent in a direction away from said housing or a metal part of said housing.
4. The magnetic sensor-type antenna according to claim 3, wherein at least one of plural end portions is bent in a direction away from said housing or a metal part of said housing, at least one of the remaining end portions being bent in a different direction.
5. The magnetic sensor-type antenna according to any one of claims 1-4, wherein end portions of said magnetic core are shaped along an inner wall of said housing.
6. The magnetic sensor-type antenna according to any one of claims 1-5, wherein end portions of said magnetic core are inclined.
7. The magnetic sensor-type antenna according to any one of claims 1-6, wherein end portions of said magnetic core are inclined, tip end portions of said magnetic core being bent such that said tip end portions are in parallel with said center portion.
8. A magnetic sensor-type antenna for receiving a radio wave, said antenna comprising a magnetic main path member comprising a magnetic core and a coil wound around said magnetic core, and a pair of magnetic sub-path members attached to said magnetic core, said magnetic sub-path member

being made of a material having a smaller specific permeability than that of said magnetic core.

9. The magnetic sensor-type antenna according to claim 8, wherein it comprises a gap of 0.025-3 mm between one end of said magnetic sub-path member and said magnetic core.

10. The magnetic sensor-type antenna according to claim 8, wherein end portions of both magnetic sub-path members are positioned in a center portion of said magnetic core, with a gap of 0.025-3 mm between the ends of both magnetic sub-path members.

11. The antenna according to claim 9 or 10, wherein said magnetic sub-path member has a specific permeability of 2 or more, lower than that of said magnetic main path member.

12. The antenna according to any one of claims 1, 2 and 4-11, wherein it is disposed in a housing, and wherein end portions of said magnetic core are bent in a direction away from said housing or a metal part of said housing.

13. A magnetic sensor-type antenna for receiving a radio wave, said antenna comprising a magnetic main path member comprising a magnetic core and a coil wound around said magnetic core, and a magnetic sub-path member attached to said magnetic core; said magnetic sub-path member being constituted by a first magnetic sub-path member, and a second magnetic sub-path member sandwiched by said first magnetic sub-path member and said magnetic core without an air gap; and said second magnetic sub-path member having a smaller specific permeability than that of said first magnetic sub-path member.

14. The antenna according to any one of claims 8-13, wherein said magnetic sub-path member is formed by applying a paint containing soft magnetic powder to said magnetic main path member.

15. The antenna according to any one of claims 1-14, wherein said

magnetic core is a bundle of plural metal wires.

16. The antenna according to any one of claims 1-15, wherein said magnetic core is a laminate of plural thin ribbons.

17. The antenna according to claim 13, wherein said magnetic core and said first magnetic sub-path member are laminates of thin, soft magnetic metal ribbons.

18. The antenna according to any one of claims 8-17, wherein said magnetic core is a laminate of plural thin ribbons, and wherein said magnetic sub-path member is disposed on a laminate cross section of said magnetic main path member.

19. The antenna according to claim 18, wherein said magnetic sub-path member is a laminate of plural thin ribbons, and wherein said magnetic main path member and said magnetic sub-path member are aligned in the same lamination direction.

20. A magnetic sensor-type antenna comprising a magnetic core and a coil wound around said magnetic core for receiving a radio wave, wherein said antenna comprises a case in which said magnetic core and said coil are disposed, and wherein said case has a specific permeability of 2 or more, smaller than that of said magnetic core.

21. The antenna according to claim 20, wherein said magnetic core has a body portion disposed in said case and end portions exposed from said case.

22. The antenna according to claim 20 or 21, wherein said case is constituted by a soft magnetic case portion for receiving a body portion of said magnetic core, and end portions extending from said soft magnetic case portion for receiving end portions of said magnetic core; wherein said soft magnetic case portion has a specific permeability of 2 or more, smaller than that of said magnetic core; and wherein end portions of said case has a smaller specific permeability than that of said soft magnetic case portion.

23. The antenna according to claim 20 or 21, wherein said case is constituted by a soft magnetic case portion for receiving a body portion of said magnetic core, and non-magnetic case portions extending from said soft magnetic case portion for receiving end portions of said magnetic core; and
5 wherein said soft magnetic case portion has a specific permeability of 2 or more, smaller than that of said magnetic core.
24. The antenna according to any one of claims 20-23, wherein the magnetic main path member comprising said magnetic core and said coil wound around said magnetic core is fit in said case.
- 10 25. The antenna according to any one of claims 20-24, wherein said case is injection-molded.
26. The antenna according to any one of claims 20-24, wherein said case is obtained by curing a curable slurry charged into a mold, in which the magnetic main path member comprising said magnetic core and said coil
15 wound around said magnetic core is placed.
27. The antenna according to any one of claims 20-26, wherein it is disposed in a metal housing; and wherein end portions of said magnetic core are bent in a direction away from said metal housing.
28. The antenna according to any one of claims 20-26, wherein it is
20 disposed in a metal or non-metal housing together with other metal parts than said antenna; and wherein end portions of said magnetic core are bent in a direction away from said metal parts.
29. The antenna according to claim 28 or 29, wherein said tip end portions of the magnetic core are substantially in parallel with a bottom surface of said
25 metal or non-metal housing.
30. A radio-controlled timepiece comprising the antenna recited in any one of claims 1-29 in a metal housing.
31. A keyless entry system comprising a transmitter and a receiver, at

least one of said transmitter and said receiver containing the antenna recited in any one of claims 1-30.

32. An RFID system comprising the antenna recited in any one of claims 1-30 in an RFID tag.